

In re Patent Application of
NELSON ET AL.
Serial No. 10/733,739
Filed: DECEMBER 11, 2003

REMARKS

Applicants thank the Examiner for the thorough examination of the present application. Independent Claims 1, 12, 17 and 21 have been amended to more clearly define the present over the cited references. Dependent Claims 2, 4, 7, 10, 11, 13, 14, 18, 22, 23, 25, 27 and 28 have been amended for consistency.

The claim amendments and detailed arguments supporting patentability are provided below.

I. The Amended Claims

Each of the independent claims has been amended to clearly recite that the step-up transformer within the housing and connected to the electrical generator, also within the housing, is an alternating current (AC) step-up transformer. In particular, amended independent Claim 1 is directed to an electrical power generating apparatus comprising the housing, the electrical generator within the housing, and a turbine for driving the electrical generator. Moreover, Claim 1 has been amended to recite the alternating current (AC) step-up transformer within the housing and connected to the electrical generator. Support for this amendment can be found in the description of the direct connection between the electrical generator and the output lines and the schematic diagram of FIG. 2, for example.

As noted at paragraph [0022] of the present specification, the electrical power generator may advantageously eliminate the need for an isolated phase bus to

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connect the electrical generator and the step-up transformer. Without the isolated phase bus, the footprint typically necessary for an electrical generator and step-up transformer is reduced. Furthermore, design time of a power plant is advantageously decreased, as well as design cost. Construction costs associated with an isolated phase bus are advantageously eliminated, and the reduced footprint decreases general power plant costs.

Independent Claims 12, 17 and 21 have been similarly amended to Claim 1 to recite the AC step-up transformer within the housing.

II. Claims 1-11 and 21-28 Are Patentable

The Examiner rejected independent Claims 1 and 21 over the Ryhiner patent. The Ryhiner patent is directed to control of a combined heat and electrical power generating system. The patent provides at column 2, lines 37-44:

"Because changes in speed of rotation of the engine also change the frequency of the electric current it produces, which is undesirable as the consumer requires a uniform alternating current frequency of 50 Hz, the electric current can be kept at the mains frequency e.g. by conventional AC/DC/AC transformation using a frequency converter. "
(Emphasis added).

The AC/DC/AC transformation is achieved by:

"[a] 0-370 V/0-1500 Hz generator (4). To be able to supply electric power of constant frequency to the house connection or the public supply network (50 Hz), a rectifier (5), a+370

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V DC step-up trrnstrformer [sic] (6) and a 3x400 V AC/50 Hz inverter with combined current regulator (7) are built into the BHPS. The electric power is then discharged at 3x400 V AC into the public supply network (8a-c)." (Col. 3, lines 1-7).

In other words, the step-up transformer of Ryhiner is a DC step-up transformer and not an AC step-up transformer as in the claimed invention. Of course, an AC step-up transformer would not work in the generating system of Ryhiner because it is fed with a DC input from the rectifier and must produce a DC output to, in turn, feed the inverter. Ryhiner discloses a rather small generator, 15 Kw (col. 3, line 28) of a completely different type than the claimed invention. Moreover, Ryhiner simply teaches away from the claimed invention of an AC step-up transformer as in the claimed invention.

In view of the patentability of independent Claims 1 and 21, it is submitted that their dependent claims, that include yet further distinguishing features, are also patentable and require no further discussion herein.

III. Claims 12-20 Are Patentable

The Examiner did not specifically reject independent Claims 12 and 17 in the Official Action. However, the Examiner did reject independent Claims 3 and 4 that are similar to independent Claims 12 and 17, respectively. Believing that the Examiner made a typographical error in

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failing to specifically reject Claims 12 and 17, and to advance prosecution of the application, Applicants provide the following arguments supporting the patentability of these claims.

Amended independent Claim 12 is similar to amended independent Claim 1, but further recites that the electrical generator has an output of at about 50 MW. As noted above, the primary reference, Ryhiner, fails to disclose an AC step-up transformer and indeed, the substitution of an AC transformer in the generator system of Ryhiner would not be possible in view of Ryhiner's AC/DC/AC transformation scheme. Independent Claim 12 is patentable for this critical shortcoming of Ryhiner alone.

Independent Claim 12 also recites that the generator has an output of at least 50 MW, while the generator of Ryhiner is a small fraction of that, that is Ryhiner discloses a 15 KW maximum output generator. In rejecting dependent Claim 3, the Examiner cited the Severs et al. patent disclosing an underwater nuclear power plant having an output of 3,425 MW. It is respectfully submitted that the Ryhiner disclosure of a small power generator and the Severs et al. disclosure of a grand underwater nuclear reactor are not properly combinable as they are directed to completely different power production schemes. Accordingly, it is submitted that there is no proper teaching in the prior art to scale up the 15 KW generator of September 16, 2005 to at least 50 MW. This provides yet another independent basis for patentability of independent Claim 12. Its dependent claims,

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that recite yet further distinguishing features are also patentable and need no further discussion herein.

Independent Claim 17 recites a barrier in the housing between the electrical generator and the AC step-up generator. As noted above, the primary reference, Ryhiner, fails to disclose an AC step-up transformer and indeed, the substitution of an AC transformer in the generator system of Ryhiner would not be possible in view of its AC/DC/AC transformation scheme. Independent Claim 17 is also patentable for this critical shortcoming of Ryhiner alone.

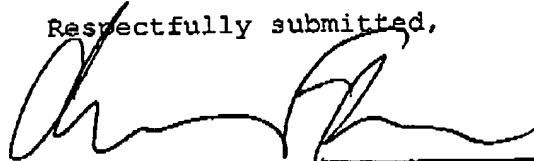
In rejecting dependent Claim 4 that is similar to independent Claim 17, the Examiner properly recognized that 15 KW power generator of Ryhiner failed to disclose such a barrier, but looked to the 3,425 MW underwater nuclear reactor of Severs et al. in an attempt to supply this noted deficiency of Ryhiner. Applicants submit that the selective combination of Ryhiner and Severs et al. is not proper and that amended independent Claim 17 is also patentable based upon the recitation of the barrier between the electrical generator and the AC step-up generator. In other words, this provides yet another independent basis for the patentability of amended independent Claim 17. In view of the patentability of Claim 17, its dependent claims, that recite yet further distinguishing features, are also patentable and need no further discussion herein.

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IV. Conclusions

In view of the amendments to the claims and the arguments presented herein, it is submitted that all of the claims are patentable. Accordingly, a Notice of Allowance is respectfully requested in due course. Should any minor informalities need to be addressed, the Examiner is encouraged to contact the undersigned attorney.

Respectfully submitted,



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CERTIFICATE OF FACSIMILE TRANSMISSION

I HEREBY CERTIFY that the foregoing correspondence has been forwarded via facsimile number 571-273-8300 to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 this 21st day of September, 2005.

